

WHAT IS CLAIMED IS:

1. An information exchanging system comprising:

a plurality of information communication terminals that exchange information including a plurality of elements,

5 wherein, of the plurality of information communication terminals an information communication terminal that transmits the information includes,

a security-coupling level setting unit which sets a security-coupling level of the plurality of elements of the
10 information;

a dividing rule setting unit which sets a dividing rule that divides the information into a plurality of pieces of loosely coupled information, based on the security-coupling level set by the security-coupling level
15 setting unit;

a dividing unit which divides the information into the plurality of pieces of loosely coupled information, based on the dividing rule set by the dividing rule setting unit; and

20 a transmitting unit which transmits the plurality of pieces of loosely coupled information divided by the dividing unit, and the dividing rule set by the dividing rule setting unit, and

wherein, of the plurality of information communication
25 terminals an information communication terminal that

receives the information includes,

a receiving unit which receives the plurality of pieces of loosely coupled information, and the dividing rule; and

a re-structuring unit which re-structures the
5 information from the plurality of pieces of loosely coupled information, based on the dividing rule received by the receiving unit.

2. The information exchanging system according to claim
10 1, wherein the transmitting unit further comprises a multi-routing unit which transmits the plurality of pieces of loosely coupled information by using a plurality of transmission paths, and

the receiving unit receives the plurality of pieces
15 of loosely coupled information from the plurality of transmission paths.

3. The information exchanging system according to claim
1, wherein

20 the information communication terminal that transmits the information further includes

a naming rule setting unit which sets a naming rule that sets separate names to the elements instead of their original names;

25 a separate-name setting unit which sets separate names

to the elements of the information in stead of their original names, based on the naming rule set by the naming rule setting unit; and

a naming rule transmitting unit which transmits the
5 naming rule set by the naming rule setting unit, and

the information communication terminal that receives the information includes,

a naming rule receiving unit which receives the naming rule; and

10 a name changing unit which changes the separate names of the elements of the information to their original names, based on the naming rule received by the naming rule receiving unit.

15 4. The information exchanging system according to claim 1, wherein the information is described in the XML.

5. The information exchanging system according to claim 4, wherein the security-coupling level setting unit sets
20 a security-coupling level based on at least one of names, contents, and attributes of the elements, for the elements defined in the DTD.

6. The information exchanging system according to claim 1, wherein

the loosely coupled information includes re-coupling information for re-coupling information in the information terminal device at the receiving side, and

the dividing rule includes information for specifying a correspondence between the loosely coupled information and the re-coupling information.

7. An information communication terminal for transmitting/receiving information including a plurality of elements, the information communication terminal comprising:

a security-coupling level setting unit which sets a security-coupling level of the plurality of elements;

a dividing rule setting unit which sets a dividing rule that divides the information into a plurality of pieces of loosely coupled information, based on the security-coupling level set by the security-coupling level setting unit;

a dividing unit which divides the information into the plurality of pieces of loosely coupled information, based on the dividing rule set by the dividing rule setting unit; and

a transmitting unit which transmits the plurality of

pieces of loosely coupled information divided by the dividing unit, and the dividing rule set by the dividing rule setting unit.

- 5 8. The information communication terminal according to claim 7, further comprising:

a receiving unit which receives the plurality of pieces of loosely coupled information, and the dividing rule; and

- 10 a re-structuring unit which re-structures the information from the plurality of pieces of loosely coupled information, based on the dividing rule received by the receiving unit.

- 15 9. The information communication terminal according to claim 7, wherein the transmitting unit includes a multi-routing unit which transmits the plurality of pieces of loosely coupled information by using a plurality of transmission paths.

- 20 10. The information communication terminal according to claim 7, further comprising:

a naming rule setting unit which sets a naming rule that sets separate names to the elements instead of their original names;

- 25 a separate-name setting unit which sets separate names

to the elements of the information instead of their original names, based on the naming rule set by the naming rule setting unit; and

a naming rule transmitting unit which transmits the
5 naming rule set by the naming rule setting unit.

11. The information communication terminal according to claim 10, further comprising:

a naming rule receiving unit which receives the naming
10 rule; and

a name changing unit which changes the separate names of the elements of the information to their original names, based on the naming rule received by the naming rule receiving unit.

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12. The information communication terminal according to claim 7, wherein the information is described in the XML.

13. The information communication terminal according to
20 claim 12, wherein the security-coupling level setting unit sets a security-coupling level based on at least one of names, contents, and attributes of the elements, for the elements defined in the DTD.

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14. The information communication terminal according to claim 7, wherein

the loosely coupled information includes re-coupling information for re-coupling information in the information

5 terminal device at the receiving side, and

the dividing rule includes information for specifying a correspondence between the loosely coupled information and the re-coupling information.

10 15. An information exchanging method that is executed by using an information exchanging system, the information exchanging system comprising a plurality of information communication terminals that exchange information including a plurality of elements, the information
15 exchanging method comprising:

the steps of, to be executed by an information communication terminal that transmits the information,

setting a security-coupling level of the plurality of elements;

20 setting a dividing rule that divides the information into a plurality of pieces of loosely coupled information, based on the set security-coupling level;

dividing the information into the plurality of pieces of loosely coupled information, based on the set dividing

25 rule; and

transmitting the plurality of pieces of loosely coupled information to another information communication terminal, and

the steps of, to be executed by the information communication terminal that receives the information,

receiving the plurality of pieces of loosely coupled information, and the dividing rule; and

re-structuring the information from the plurality of pieces of loosely coupled information, based on the received dividing rule.

16. The information exchanging method according to claim 7, wherein the transmitting step further comprises a multi-routing step of transmitting the plurality of pieces of loosely coupled information by using a plurality of transmission paths, and

at the receiving step, the plurality of pieces of loosely coupled information are received from the plurality of transmission paths.

17. The information exchanging method according to claim 15, the information exchanging method further comprising:

the steps of, to be executed by the information communication terminal that transmits the information,

setting a naming rule that sets separate names to the

elements instead of their original names;

setting separate names to the elements of the information in stead of their original names, based on the set naming rule set; and

5 transmitting the set naming rule to the information communication terminal that receives the information; and the steps of, to be executed by the information communication terminal that receives the information, receiving the naming rule; and

10 changing the separate names of the elements of the information to their original names, based on the received naming rule.

18. The information exchanging method according to claim 15 15, wherein the information is described in the XML.

19. The information exchanging method according to claim 18, wherein at the security-coupling level setting step, a security-coupling level is set based on at least one of 20 names, contents, and attributes of the elements, for the elements defined in the DTD.

20. The information exchanging method according to claim 15, wherein 25 the loosely coupled information includes re-coupling

information for re-coupling information in the information terminal device at the receiving side, and

the dividing rule includes information for specifying a correspondence between the loosely coupled information and the re-coupling information.

21. A computer program that makes an information exchanging system transmit/receive information including a plurality of elements, the computer program containing instructions for making the information exchanging system execute the steps of comprising:

setting a security-coupling level of the plurality of elements;

setting a dividing rule that divides the information into a plurality of pieces of loosely coupled information, based on the set security-coupling level;

dividing the information into the plurality of pieces of loosely coupled information, based on the set dividing rule; and

transmitting the plurality of pieces of loosely coupled information to an another information communication terminal.

22. The computer program according to claim 21, further containing instructions for making the information exchanging system execute the steps of:

receiving the plurality of pieces of loosely coupled
5 information, and the dividing rule; and

re-structuring the information from the plurality of
pieces of loosely coupled information, based on the received
dividing rule.

10 23. The computer program according to claim 21, wherein the transmitting step further comprises a multi-routing step of transmitting the plurality of pieces of loosely coupled information by using a plurality of transmission paths.

15 24. The computer program according to claim 21, further comprising:

setting a naming rule that sets separate names to the
elements instead of their original names;

setting separate names to the elements of the
20 information in stead of their original names, based on the
set naming rule set; and

transmitting the set naming rule to the information
communication terminal that receives the information.

25. The computer program according to claim 24, further comprising:

receiving the naming rule; and

changing the separate names of the elements of the
5 information to their original names, based on the received
naming rule.

26. The computer program according to claim 21, wherein
the information is described in the XML.

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27. The computer program according to claim 26, wherein
at the security-coupling level setting step, a
security-coupling level is set based on at least one of names,
contents, and attributes of the elements, for the elements
15 defined in the DTD.

28. The computer program according to claim 21, wherein
the loosely coupled information includes re-coupling
information for re-coupling information in the information
20 terminal device at the receiving side, and

the dividing rule includes information for specifying
a correspondence between the loosely coupled information
and the re-coupling information.

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29. A computer-readable recording medium recording a computer program that makes an information exchanging system transmit/receive information including a plurality of elements, the computer program containing instructions for making the information exchanging system execute the steps of comprising:

setting a security-coupling level of the plurality of elements;

10 setting a dividing rule that divides the information into a plurality of pieces of loosely coupled information, based on the set security-coupling level;

dividing the information into the plurality of pieces of loosely coupled information, based on the set dividing rule; and

15 transmitting the plurality of pieces of loosely coupled information to an another information communication terminal.